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Journal of the Society of Arts.

FRIDAY, JULY 27, 1855.

SOCIETY'S VISIT TO PARIS.

The Council have much pleasure in laying before the members the following letter, from Colonel the Hon. C. B. Phipps, written by command of H.R.H. Prince Albert, the President of the Society:—

Osborne, July 23, 1855.

My dear Sir,—His Royal Highness the Prince having considered the subject which seems to have been under discussion in the Council of the Society of Arts, namely that of the Society visiting the Paris Exhibition in a body, and, if possible, together with the delegates from the four hundred associated Institutions, has commanded me to express to you his conviction that much good would arise to the prosecution of the many important and useful objects, which the Society is constituted to promote, by the execution of this plan.

The prominent part taken by the Society in originating the Great Exhibition of 1851, naturally suggests the wish that its members should visit together its sequel at Paris.

The point, however, to which His Royal Highness would attach most importance, would be their being enabled to discuss on the spot (together with the members of the affiliated Societies) upon a close inspection of that vast collection of the products of all nations, and a conscientious comparison of them with those of the Exhibition of 1851, the question by what means the progress of Science and Art would best be promoted in this country.

The visit would also afford an opportunity of testing the principles upon which the acknowledged vast improvements lately made in the French metropolis have been carried on, and considering how far they may, with advantage, be applied to our circumstances at home.

Sincerely yours,
C. B. PHIPPS.

P. Le Neve Foster, Esq.

In accordance with the above gracious recommendations, a visit of the Society to Paris has been fixed to take place from Monday the 3rd of September, to Saturday the 15th of September.

The Council have it in their power to announce, that the English and French Railway Companies have at length consented to issue return tickets to Paris and back at reduced fares, and they are at present in negotiation with the Railway Companies to reduce the fares in favour of the Society of Arts on this particular occasion. These tickets are to be available for going and returning by any trains, at any time during the above period.

The Council are now organising arrangements by which they hope to be able to issue, at the House of the Society, in the Adelphi, the return tickets to Paris and back, the French passports, and a list of hotels and lodgings in Paris at moderate charges.

The Council will also provide a central office in Paris, near the Great Exhibition, as a point of reunion for the members of the Society of Arts and their friends, and for the representatives of the Associated Institutions, at which information will be afforded as to lodgings, guides, &c., and at which from day to day visits to the several departments of the Universal Exhibition, and to different points of interest in Paris, will be organised, and excursions to the celebrated places in the vicinity arranged.

With a view of extending the advantages thus offered, every member of the Society will have the privilege of taking, in addition to his own, tickets for two friends, either ladies or gentlemen.

The associated Institutions will each have the privilege of nominating a representative and two other persons, ladies or gentlemen, to join the party.

Further details will be given as early as possible, but in the meantime the Secretary is prepared to receive and register applications.

As the accommodation which the Society can promise must necessarily be restricted, owing to the numbers now visiting Paris, the Council beg distinctly to state, that they can only issue a limited number of tickets, but they pledge themselves to issue those tickets in the order of the applications.

The Members of the Society and of the associated Institutions are to understand that the visit alluded to above is quite distinct from, and forms no part of, the plan for the Artizans' Visit to Paris.

THE NATIONAL COLLECTIONS.

In the House of Commons the other evening, Mr. Ewart inquired of the First Lord of the Treasury, whether the Government was willing to cause to be affixed to the works of art (paintings, statues, monuments), and specimens in our different national collections—the National Gallery, Hampton Court Palace, the British Museum, and similar public institutions—short descriptive tablets or inscriptions, giving the subject of the work, the name and date of the artist, the school to which he belongs, and such other brief historical or scientific information as might be instructive to the public, and supply, to those who cannot afford to buy one, the place of a catalogue?

Lord Palmerston said, the suggestion of the hon. member was one which might be naturally expected from one who had, like the hon. gentleman, devoted his mind to the diffusion of useful and entertaining knowledge among the humbler classes. He thought the suggestion was deserving of adoption, and did not apprehend that it would be attended with any material expense or trouble. The Government were indebted to the hon. member for the suggestion, and would give it their attention.

DECIMAL COINAGE COMMISSION.

House of Commons, Monday, 23rd July.

In reply to Mr. H. Hamilton,

The Chancellor of the Exchequer stated, that the Commissioners for inquiring into the propriety of a Decimal Coinage were Lord Monteagle, Mr. Hubbard (late Governor of the Bank), and Lord Overstone. The commission itself was not yet complete, but when it was, there could be no objection to lay a copy upon the table.

DECIMAL COINAGE.

By Frederic James Minasi.

(Continued from page 606.)

Leaving, then, the question of advantages to be derived by the introduction into this country of a decimal system of money and accounts in place of those at present used among us, as a subject upon the merits of which there exists very little difference of opinion amongst those who may be considered to have studied the matter, we shall proceed to the more important and practical part of the question, that which relates to the BASIS upon which a decimal system of money for the United Kingdom should be founded. On this point there does not appear the same unanimity either in the Select Committee of the House of Commons or among those who have, since the publication of their report, taken part in the discussion going on. Referring to this, the essential part of the whole question, the Committee state that "the only points on which any difference of opinion was expressed by the witnesses relate to the precise basis which should be adopted, and the practical measures to be employed for introducing the decimal system, so as to produce the least amount of temporary inconvenience, and the smallest extent of unwillingness to encounter the change on the part of the classes who are the most likely to be affected by it."[*] And the series of pamphlets since published, and the discussions carried on during the last eighteen months at the various scientific societies and in the public prints, fully prove such to be the state of the question. To the different proposals now before the public for establishing a system of decimal coinage for this country I shall now proceed to invite your attention.

In regard to the question of the mode by which such a system is to be introduced, and the basis upon which it should be founded, two courses seem to be open, either to create a decimal system of coinage independent of that now in use amongst us, or, so far as it can be done, to re-arrange it in the required progression. In the former of these two modes of procedure, we must either create an entirely new system of money, or adopt for the purpose one already in use in some other country, or at least, one formed on its model. So far as I can learn, no scheme has been proposed fairly coming under the description of an entirely new series of coins; a near approach, however, to it will be found in the following proposal, emanating from Mr. Alexander Munro, of Glasgow.[†] "I would propose," he says, "400 mils as our unit, and it seems to me an unanswerable argument for so doing, that it would introduce the Octagal into our Decimal system, and is also of the nearest approximation to the value of the French coinage:—

As 1 sov. = 1000 mils = 25 francs.
Hence 40 mils = 1 franc.
And 400 mils = 10 francs.

This unit I would name an *Imperial*, being an integral of the imperial standard: then our monetary calculations would be as under, viz.,

1 mil = 24-25ths farthing.
4 mils are............... 1 cent = 3,21-25ths ,,
40 mils or 10 cents are 1 decim = 9,6-10ths pence.
400 mils or 10 decims are 1 imperial = 8 shillings sterling.

Acting on this plan, our books would not be altered, as 40 imperials, 9 decims, 9 cents, and 1 mil, would be entered as at present, thus:—

Imp.	Dec.	Cents.	
40	9	9¼	and so on."

The objections that may be urged against this proposal will be more evident as we proceed. Its peculiar advantage is, that "while each column ascends and descends by *tenths*, each denomination is capable of *halves*, *fourths*, and *eighths*, without a fraction." Its disadvantage, common to every plan of this class, is the difficulty of introducing a system so entirely novel in its construction, and affording so little comparison with that it is intended to displace. Of propositions for adopting in this country a foreign system of moneys, no doubt the most important is that of Mr. James Yates, F.R.S., whose paper on this subject, read at the Institution of Civil Engineers in February, 1854, gained for its author the Telford medal of that year. Mr. Yates advocates the introduction into this country of the entire French *Système Métrique*. It is not possible here to give a detailed account of the origin and introduction into France of this highly-scientific system of metrology, such as is given in the paper in question, since published under the sanction of the council of the institution. I make a few quotations, however, to enable you to form some idea of the proposition: "The coins used in France are adjusted decimally; the franc, which weighs five grammes of silver, is the unit of all monies, its fractions being called décimes and centimes." 1 franc = 100 centimes = 9·5157 pence nearly. The following table, extracted from Mr. Yates's paper, will explain the coins he proposes should be used:—

Denominations.	Values in francs.	Approximate Equivalents.
GOLD—		
Royal	100	£4 sterling.
Half Royal	50	English double sovereign.
Sovereign	25	English sovereign; Belgian Leopold.
Louis or Napoleon.	20	Dutch Willem, or 10-guilder piece; Prussian Fredericks d'or.
Ten-franc piece ...	10	Dutch 5-guilder piece; Indian pagoda.
SILVER—		
Five-franc piece or dollar..........	5	Dollars of Europe or America.
Two-franc piece or florin..........	2	Dutch guilder; Indian rupee; Russian half-ruble, &c.
FRANC	1	Dutch half-guilder, &c.; Greek drachmos; English 10d. or postage stamp.
Half-franc...	·5	Russian 10-copeck piece; carlino of Naples.
Quarter-franc	·25	
PAPER, BRASS, AND COPPER—		
Blue postage stamp.	·2	Dutch 10-cent piece; Russian 5-copeck piece.
Red do., receipt do., Penny ...	·1	English penny; Dutch stiver, &c.
Halfpenny............	·05	English halfpenny, &c.
Two-cent piece ...	·02	English farthing.
CENT	·01	Prussian pfenning; Greek lepton, &c.

It is stated by the author, that this "table of coins supplies equivalents in all current English coins, so far exact as to enable payments to be made, in all cases, to within the fifth of a farthing. If any person owed a farthing, he would be unable in the proposed medium to pay the fraction with accuracy, and would either gain or lose about the fifth part of a farthing, because there would be no coin of that exact value. In all other respects it would be much easier to reckon, express, pay, and receive in this series of coins, than by the use of those now current." Such is a very brief outline of a proposal which has gained for its author so much honour. To this plan objections have been raised, chiefly having reference to the great amount of disturbance that, it is thought, would arise in forming a relation between the old and new money should they continue in circulation together; the length of time, too, employed in its introduction in France, notwithstanding the strictness with which its use is enforced by law, is pointed to as a further reason for not entertaining this plan for a decimal coinage. Its author, however, in a subsequent paper,[*] proposes to withdraw the present money, by the substitution of a paper currency, representing the equivalent in francs, which might, after an interval, requisite to prepare the new money, be exchanged for metal.

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[*] Report of the Select Committee on Decimal Coinage, 1853.

[†] Published letter to the Chancellor of the Exchequer, dated March 1st, 1854.

[*] On a method of substituting francs and centimes for the present English metallic currency. Read before the Statistical Section of the British Association, 1854.

Under this head may also be placed the proposal to introduce the dollar of 100 cents, or the system of the United States of America, a plan that has already been followed in one of our most important colonies, Canada, as previously noticed. The application of a dollar, value 4s. 2d. of our present currency, to the solution of this question, forms also a scheme to which reference will presently be made in the second series of propositions for a decimal coinage.

A further proposal, under the present division, consists in an adaptation of the Portuguese system of accountancy, by which to effect the desired end. Its author is Mr. James Alexander, of Edinburgh, who advocated it in a paper* read before the Royal Scottish Society of Arts. It is not possible, in a brief notice like that I now offer, to do justice to this paper. The author explains the mode of keeping accounts in Portugal, which is "in one simple denomination, that of *rees* and *milrees*," or thousands of rees. The *ree* itself is not an actual coin, the lowest piece in circulation being of the value of 5 rees, all other coins in use are, therefore, multiples of 5. A remarkable analogy is shown to subsist between the Portuguese and English systems, which Mr. Alexander believes would secure the introduction of a decimal system of accountancy in this country, with the moneys at present in circulation, in the same way as the Portuguese accounts are kept in decimals, while a non-decimal money circulates among the people. This analogy may be seen in the following tables:—

BRITISH MONEY.			PORTUGUESE MONEY.		
4 farthings	make	1 penny.	4 five-rees	make	1 vintem.
12 pence	....	1 shilling.	12 vintems	......	1 half-crusado.
20 shillings	....	1 pound.	20 half-crusados		1 moidore.
10 florins	....	1 pound.	10 crusados	......	1 moidore.

Hence,

5 rees	or	$005	(the 960th of a moidore)	is analagous to	1 farthing
1 vintem	,,	$020	(240th ,,)	,,	1 penny.
1 half-crusado,		$240	(20th ,,)	,,	1 shilling.
1 moidore	,,	4$800	....	,,	1 pound.

Mr. Alexander would restore us the guinea at the value of 1,000 farthings; and by the intervention of a new silver coin of the value of 10d., to be called a "Victoria," proposes a very simple method by which accounts might henceforth be kept in farthings:—

"24 Victorias would change the sovereign.
25 ,, ,, ,, new guinea.
5 ,, would pay 200 farthings.
10 ,, ,, 400 ,,
15 ,, ,, 600 ,,
20 ,, ,, 800 ,, "

It will be seen that this proposal is not in reality the importation of the Portuguese money into this country, but rather the modification of our own existing coinage on the model of that system of accountancy.

Proceeding to the next class of plans—those which seek to introduce a decimal system of moneys as well as of accounts—which shall include, so far as possible, the most important of those now in use, in order not only to disturb as little as may be the existing ideas of the people in connexion with money, but also for the purpose of more readily establishing the relation between the new and old coinage. It will not have escaped notice, at the outset, that the pound sterling, being built up of 240 pence, cannot be decimalised to that coin; nor, on the other hand, can any decimal multiple of a penny produce the pound; hence, we cannot form a purely decimal system that shall include these two important coins as *moneys of account* simply.

As a starting-point, because naturally looked to as deserving most respectful attention, I proceed to lay before you the plan proposed by the late Committee of the House of Commons. The report states:—"The first question to be decided is, what shall be the unit of the new system of coinage?—and your Committee have no hesitation in recommending the present pound sterling. Considering that the pound is the present standard, and, therefore, associated with all our ideas of money value, and that it is the basis on which all our exchange transactions with the whole world rest, it appears to your Committee that any alteration of it would lead to infinite complication and embarrassment in our commercial dealings; in addition to which it fortunately happens that its retention would afford the means of introducing the decimal system with the minimum of change. Its tenth part already exists in the shape of the florin, or two-shilling piece, while an alteration of four per cent. in the present farthing will serve to convert that coin into the lowest step of the decimal scale which it is necessary to represent by some actual coin, viz., the thousandth part of a pound. To this lower denomination, your Committee propose, in order to mark its relation to the unit of value, to give the name of mil. The addition of a coin to be called a cent, of the value of 10 mils, and equal to the hundredth part of the pound, or the tenth of the florin, would serve to complete the list of coins necessary to represent the moneys of account, which would accordingly be pounds, florins, cents, and mils."

This plan, which had previously been ably advocated, in 1834, by Sir Charles Pasley, in his very admirable work on this subject*, and subsequently by Professor De Morgan, in the *Companion to the Almanac* for 1841, may be traced to an anonymous writer, who, under the title of "Mercator," in the *Pamphleteer* for July, 1814, gives, "A Sketch for a New Division and Subdivision of Money, Weights, and Measures,"—his proposed coins being:—*Gold*, 1,000 mils =£1, and 500 mils=10s.; *Silver*, 250 mils=1 crown, 125 mils=half-a-crown, 50 mils=1s., 25 mils=sixpence; *Copper*, 5 mils=1 penny, 1 mil=1 farthing.

In noticing the objections which have been made to this scheme, it will be found that but little opposition is made to the first step in the decimal scale—the florin, which seems easy and natural, affording a very useful coin, not attended with inconvenience in its use,† since its value is precisely two shillings of the existing currency. It is to the next two steps that the chief amount of opposition is raised; the creation of the *cent*, in value equal to $2\frac{2}{5}$d. of our present money, and the *mil*, equal to $\frac{24}{25}$ of a farthing.

It is contended that such a plan as this would, by its interference with the present copper currency, amounting to no less than between 5,000 and 6,000 tons in weight,‡ produce a very great amount of disturbance in all our settled ideas founded upon the penny, besides the confusion that might be expected to arise from such coins existing side by side for many years after its introduction with those in use, and with which they would be altogether incommensurable, as exhibited in the following table:—

Cents.		Pence.	Mils.		Farthings.
1	=	$2\frac{2}{5}$	1...	=	$\frac{24}{25}$
2	,,	$4\frac{4}{5}$	2............	,,	$1\frac{23}{25}$
3	,,	$7\frac{1}{5}$	3............	,,	$2\frac{22}{25}$
4	,,	$9\frac{3}{5}$	4	,,	$3\frac{21}{25}$
5	,,	12	5...	,,	$4\frac{4}{5}$
6	,,	$14\frac{2}{5}$	6............	,,	$5\frac{19}{25}$
7	,,	$16\frac{4}{5}$	7............	,,	$6\frac{18}{25}$
8	,,	$19\frac{1}{5}$	8............	,,	$7\frac{17}{25}$
9	,,	$21\frac{3}{5}$	9............	,,	$8\frac{16}{25}$
10 or 1 florin .	,,	24	10 or 1 cent	,,	$9\frac{3}{5}$ = $2\frac{2}{5}$d.

and conversely—

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* Suggestions for a Simple System of Decimal Notation and Currency after the Portuguese Model; read December, 1853.

* Observations on the Expediency and Practicability of Simplifying and Improving the Measures, Weights, and Money used in this Country.

† I refer to its commensurate value only; objections have been made to it on the ground of similarity in size to the half-crown.

‡ In 1844, Sir J. Morrison estimated the weight of the copper coins of this country to be 5,000 tons. In the past year alone, there were added 270 tons, forming above 25 million of single pieces, viz., 6,800,000 pennies, 12,400,000 halfpennies, and 6,500,000 farthings.

Pence.		Cents.	Mils.	Pence.		Cents.	Mils.
1	,,		$4\frac{1}{6}$	7	,,	2	$9\frac{1}{6}$
2	,,		$8\frac{1}{3}$	8	,,	3	$3\frac{1}{3}$
3	,,	1	$2\frac{1}{2}$	9	,,	3	$7\frac{1}{2}$
4	,,	1	$6\frac{2}{3}$	10	,,	4	$1\frac{2}{3}$
5	,,	2	$0\frac{5}{6}$	11	,,	4	$5\frac{5}{6}$
6	,,	2	5	12 or 1 shilling	=	5	0

$\frac{1}{4}$d. = $1\frac{1}{24}$ mils; $\frac{1}{2}$d. = $2\frac{1}{12}$ mils; $\frac{3}{4}$d. = $3\frac{1}{8}$ mils.

It is objected that it is neither possible nor expedient to do away with the present penny, in consequence of the important position it holds, being essentially the poor man's coin, the household coin, and the fiscal coin—the coin upon which the pound is itself founded. That the proposal to substitute the 5 *mils* for the penny* would be an act of injustice, especially to the labouring man, involving a loss to his means, upon all small sums, of 20 per cent. That it will not do to argue that in the case of pennyworths, by measure or weight, he would get a greater quantity for his 5 mils, as either small shopkeepers would take advantage of the difference, or, in the event of an increased quantity, it would still be a loss to his means by enforcing the purchase of more than might be needed. That there are a vast number of things sold the prices of which are ruled by the penny, the bulk of which could not be increased, while, at the same time, the profit on them is too small to permit the reduction of their price to 4 mils. That by altering the penny to 5 mils the present shilling, or 50 mils, would only purchase 10 pennyworths. That the question of postage, tolls, railway fares, receipt stamps, the pay of soldiers and sailors, the important subject of piece-work in the manufacturing districts, are herein involved; and that no satisfactory solution of these prime difficulties is to be found in the report of the committee just referred to. It is further objected that the advocates of this division of the pound treat it almost wholly as a banker's question, professing a desire not to employ coins of account below the 5 mils, or even less than the cent. That it would be inconvenient for the comparison of foreign exchanges with most of those countries in which decimal systems of money are already employed. That it would occasion vast labour in calculating quantities of small value, and would be inapplicable to minute fractions in matters of account, particularly in relation to manufactured goods, the minute value of some of which render it necessary for them to be sold in parcels corresponding to the aliquot parts of a shilling for the convenience of calculation.† As a further class of objections may here be noticed, the arithmetical difficulties connected with this plan more particularly applicable to the period of transition from the old to the new system, a point that does not appear to have received a fair share of attention; and, first, it is urged that of 960 amounts commencing at one farthing, and increasing by the same sum to £1, only 40 of them can be represented *exactly* in the new money, the 920 remaining being *approximations* only. From this fact the conclusion is drawn that every operation of commercial arithmetic involving these approximations will be attended with more or less of error and uncertainty, In the process of multiplication, for instance, it has been shown that when the multiplier is only moderately large a very considerable difference is found in the results calculated under new and old systems. The following has been adduced as an example:—"Determine the value of 8,765 articles at 11s. 3d. each.

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PRESENT SYSTEM BY PRACTICE.       PROPOSED SYSTEM OF 1000 MILS TO
                                             THE POUND.
  10s.   | ½ | 8765                      8765
         |   | ----                       563 mils.
 1s. 3d. | ⅛ | 4382 10                  -----
               547 16, 3                26295
             ----------                52590
             £4930  6s. 3d.            43825
                                       -----
                               £4934·695 = £4934 13s. 11d.
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or an amount of error of not less than £4 7s. 8d. in a single operation."*

The following extract from a letter published in the *Liverpool Mercury*† may not prove uninteresting on this point: it is in reference to questions on this subject which were proposed to the students of the Normal Schools at Christmas last. Quoting Section III. of the arithmetic:—"Express the sums of money mentioned in the following question in the *decimal coinage;* work the sums decimally, and reduce the answers to the present currency." The writer proceeds as follows:—"In Question 1 we have to determine how many dozens of spoons can be purchased for £44 8s. 3d., at 7s. 9d. for one spoon; the correct answer to which will be found to be $9\frac{205}{372}$ dozen, or 9·551075. Now let us proceed to obtain a solution on the pound-and-mil system: 7s. 9d. expressed decimally is *exactly* £·3875, that is a sum *between* 387 and 388 *mils*, one of which must be determined on as the *fixed* representative of 7s. 9d. in the Committee's plan. In like manner £44 8s. 3d. (= £44·4125 exactly) would be represented by either £44 412 *mils*, or £44 413 *mils*. Let the question now be worked out with these values, and it will be found that the results of four solutions will be four *different* answers, and *all of them incorrect*. The second question proposed is as follows:—"A man who owes £2348 pays 12s. 9½d. for every pound he owes; how much does he pay in all?" The correct reply to this is, £1501 14s. 10d., but worked on the proposed system we obtain £1500 7s. 5¼d., or £1502 14s. 5d., according as we take 6 *florins* 3 *cents* 9 *mils*, or 6 *florins* 4 *cents*, to represent 12s. 9½d., the exact value in decimal *fractions* of which is ·639513, where the last 3 is to be repeated *ad infinitum*, and by the use of which, of course, a correct result may be obtained, but at such an additional expense of labour that the friends of the Decimal Association have not attempted to exhibit so awkward an illustration of their '*labour-saving*' plan in those examples which have been brought forward by them."

Leaving this proposal for a decimal coinage, we pass to one which is founded upon the half-sovereign as the unit of account. This plan, termed the *Ducat* system, has been ably advocated by Mr. W. T. Thomson, in a paper entitled "Decimal Numeration and Decimal Coinage," read before the Institute of Actuaries.‡ After adducing several objections against the £1 unit, he proceeds to set forth the advantages of a 10s. unit, which he says, "would enable us to retain the shilling as a coin of account, being the first decimal of the unit. The tenth of a shilling becomes $1\frac{2}{10}$d., a convenient coin, which need not exceed in size the present rimmed penny, while the tenth of a penny gives very nearly our present half-farthing. The 100 scale would run thus—the first decimal of the unit always corresponding with the existing shilling:—

Shilling.			Cent.					Mil.				
1	=	·1	1	(=	$1\frac{2}{10}$d.)	=	·01	1	(=	$\frac{3}{25}$d.)	=	·001
2	,,	·2	2	,,	$2\frac{4}{10}$	,,	·02	2	,,	$\frac{6}{25}$	,,	·002
3	,,	·3	3	,,	$3\frac{6}{10}$	,,	·03	3	,,	$\frac{9}{25}$	,,	·003
4	,,	·4	4	,,	$4\frac{8}{10}$	,,	·04	4	,,	$\frac{12}{25}$	,,	·004
5	,,	·5	5	,,	6	,,	·05	5	,,	$\frac{15}{25}$	,,	·005
6	,,	·6	6	,,	$7\frac{2}{10}$	,,	·06	6	,,	$\frac{18}{25}$	,,	·006
7	,,	·7	7	,,	$8\frac{4}{10}$	,,	·07	7	,,	$\frac{21}{25}$	,,	·007
8	,,	·8	8	,,	$9\frac{6}{10}$	,,	·08	8	,,	$\frac{24}{25}$	,,	·008
9	,,	·9	9	,,	$10\frac{8}{10}$	,,	·09	9	,,	$\frac{27}{25}$	,,	·009
10	,,	1·0	10	,,	12	,,	·10	10	,,	$\frac{30}{25}$	,,	·010"

To this plan the chief objections are, firstly, those urged by the advocates of the pound unit, "that the bulk of our gold circulation cannot possibly consist of 10-shilling pieces. It is impossible to coin enough of them, in a given time, to meet emergencies. We must stick to the pound—it is a national institution, engrained in all our notions, and impossible to oust it. *The true object* of the 10-shilling piece is, to break the sovereign, and lessen the amount of silver necessary to be kept up."[*] And secondly, the advocates for the preservation of the penny urge the same difficulties against this as against the undivided sovereign,—the incommensurability of its cents and mils with the present copper currency. The main advantage here offered is, the retention of the shilling as a coin of account, as at present, but such sums as 1d., 2d., 4d., 5d., 7d., 8d., 10d., and 11d., are inconvertible under this system, whose monies of accounts would be *ducats, shillings, cents, and mils.*

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* "The five-mil piece would take the place of the present penny; the two-mil piece of the present halfpenny."—*Statement of the Decimal Association*, 29th March, 1855.

† See Laurie's Decimal Coinage, p. 11.

* Author's Paper; *Journal of the Statistical Society.*

‡ February 2, 1855.

† January 30th, 1854. Prior to the appearance of Mr. Thomson's paper, the same system, which also came before the late Committee on Decimal Coinage, was advocated by Mr. Ryley, actuary, who proposed to term his unit (the half-sovereign), *an angel*, his coins of account being,

10 *crosses* = 1 [new] *penny.*
10 [new] *pence* = 1 *shilling.*
10 *shillings* = 1 *angel.*

The next[†] proposal for a decimal coinage which invites our attention is that founded upon the *florin*, or two-shillings, as the prime unit of account. This plan has lately been very ably enforced by Mr. Hugo Reid, in a paper read before the Society of Arts.[‡] He says:—"I may state at once that the system which I recommend is, to take the florin, or two-shilling piece, for the leading coin or *unit*, and to divide it into 100 parts, to be called *cents*,—*florins* and cents being the only denominations to be used as coins of accounts.

"The following four points appear to me," he continues, "to be essential in introducing a decimal system of money and accounts:—

"1. That it shall be completely decimal, not composed of a decimal and a non-decimal part.

"2. That there shall be only two coins of account, one leading coin or unit, the other the hundredth of that coin.

"3. That the less coin of account shall be of sufficiently low value to meet all ordinary requirements of the poorer classes, and render fractions very seldom necessary.

"4. That the leading existing coins shall be preserved in, or be easily convertible into, the new coins of account."

The system here recommended is acknowledged to be "practically the same as that brought forward by the Parliamentary Committee, with only a slight modification of form," to adapt it to the preceding conditions. The *cents* here spoken of would, of course, be the same as the committee's *mils*, and as such are open to the same objections that have been already referred to. A further argument has been raised against this, and some other units, which would be of silver, as tending to the establishment of that metal as a monetary standard.[*] On the whole, perhaps, this plan may be considered to exhibit qualities superior to that of the pound divided into 1000 parts, to which it is convertible by the simple expedient of removing the decimal point one place to the left, thus—

796·45 florins = £79·645 *mils.*

As we have here the tenth of the pound proposed as the chief unit, so likewise has the tenth of the half-sovereign or shilling[†] been mentioned as a fitting coin to occupy that prominent and important post; this divided into 100 cents would, of course, bear the same analogy to the *ducat* scheme as the florin does to the sovereign. After what has already been remarked, the objections to it will at once be anticipated.

(*To be continued.*)

BRITISH IRON MANUFACTURE.

Remarks on the Report of the Select Committee of the House of Commons on the Petition of Coningsby Cort, eldest Son of the late Mr. Henry Cort.

By Richard Cort.

(Continued from page 609, of No. 139.)

Although in the report of the Committee of the House of Commons, attempts are made in one or two sections to glance outwardly at facts, there is not one atom of evidence internally to prove them, or to support in any shape a single opinion advanced; nor is it anywhere stated in the Report, that any witnesses were examined or evidence taken, yet both witnesses were examined and evidence taken.

The witnesses were the late Benjamin Hall, Esq., one of the members of the Committee, then partner in the firm of Crawshay, Hall, and Bailey, at Cyfartha, and Herwain, the principal iron manufacturers in South Wales. This gentleman was father of the present Right Honourable Sir Benjamin Hall, Bart., M.P., P.C., now Chief Commissioner of Works, and brother-in-law to the present William Crawshay, Esq., another of the witnesses, the latter being directly opposed to the petition, while the former, after much longer practical experience as the partner of the late Mr. Richard Crawshay, not only gave his evidence *orally*, but in *writing*, strongly in support of the petition, being in direct contradiction to his own brother-in-law, who was then a very young man, and present to hear it.

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[*] See Proceedings of Decimal Association, p. 10, note at foot.

[†] Since this lecture was delivered the following proposal for a decimal coinage founded upon the crown or 5s. piece has been published in the *Birmingham Journal*. Its author is Mr. S. A. Goddard, and the plan is briefly as follows:—

"Let the crown be taken as the unit of value, and 100 as its exponent. The coins would then rate as follows, viz.:—

The 5s. piece	would represent	100,	called the	crown, or	100	cents.
2s. 6d.	,,	50	,,	half-crown	50	,,
2s.	,,	40	,,	florin	40	,,
1s.	,,	20	,,	shilling	20	,,
6d.	,,	10	,,	sixpence	10	,,
3d.	,,	5	,,	threepence	5	,,
1 cent piece copper coin		1	,,	cent	1	,,
½	,,	½	,,	half-cent	½	,,

There would, however, be *no necessity* for coining cents and half-cents at present. The value of pennies and halfpennies would not be disturbed, nor their use interrupted; for, as they form aliquot parts of a crown, decimal calculations could be worked in pennies, and turned into the new denomination of money with perfect facility. The coinage of pennies and halfpennies would, however, cease, and cents and half-cents would be coined from time to time, as might be found convenient. The sovereign would pass for four crowns, in the same way as a bank-note passes for five pounds. Bank-notes could pass as they now are, or their value in crowns could be struck across their face in large figures.

All present values in accounts, or in books of account, could be changed into the new denomination simply by multiplying by 4. Thus:—£100 10s. 6d. × 4 = 402 dols. 10 cents, that is, 402 crowns 10 cents. By the same rule sums in the new denomination could be changed into pounds, &c., by dividing by 4. Thus:—402 dols. 10 cents ÷ 4 = £100 10s. 6d., and for the most part this could be done mentally." In subsequent communications the author more fully illustrates the advantages which he considers belong to his plan for a decimal coinage.

Against this system the advocates for the undivided sovereign would most likely urge objections similar to those made by them to the florin and dollar units; whilst those who contend in favour of the present copper currency remaining intact will point, as in the preceding instances, to the incommensurability of the cent with the penny, since 1 penny = 1 cent × 2-3rds; and 1 cent = 3-5ths of a penny, &c.

[‡] February 14, 1855.

[*] Sir John Herschel, the late Master of the Mint, in reference to the florin system, says:—"It assumes a silver monetary standard, whereas, for good or for evil, for better for worse, we are married to a gold one. I do not mean to say a silver standard would not be better. I believe it would, and I believe a binary standard, half silver, half gold, at the option of either party to insist on, would be better than either; but gold is our standard of value, and we are lashed on to it, and we must be carried along with it, toss as it may."—Evidence before the Select Committee on Decimal Coinage—516.

[†] A "Retired Merchant" proposes to keep accounts in "pounds, shillings, and *centimes*, 100 centimes being equal to a shilling."

The other witnesses were the late Mr. Samuel Homfray, representing the Penydarran Iron Company, whose evidence, like that of Mr. William Crawshay, against the merits of my late father, was in direct contradiction not only to the acts, but the declarations of their respective companies only the year before.

R. Hill, Esq., of the firm of R. J. and A. Hill, of the Plymouth works, one of the subscribing companies to the resolutions of the general meeting of the iron trade of Great Britain, the year before, not only confirmed the proceedings of the meeting by testifying by his own presence on that occasion, but in the strongest terms supported the evidence given by Mr. Benjamin Hall, confirmatory of my father's merits. Mr. James, also, one of the master-smiths appointed by the government to superintend the trials of my father's patent puddled and rolled iron in 1785, in all the royal dockyards, with Mr. Thompson and Mr. Hawkes, both gentlemen of great experience in the iron trade, each of whom bore the most conclusive testimony to the *originality* and efficiency of my father's inventions, besides various documentary evidence, returns from the Custom House, Navy Board, and other government departments, all speaking, in one shape or the other, to the same effect.

The petitioner, thus supported against parties who were obliged to contradict themselves in any opposition they might offer to the petition, had every reason to calculate upon a very different result, although he was cautioned in the Committee room, that if the chairman called his noisy friend, Mr. Samuel Homfray, the petition would be "upset."

In addition to the recorded judgment of the iron trade of Great Britain (given in the last *Journal*), so directly at variance with the averment of the Committee in paragraph No. 3 of their report, which, though totally groundless, was deemed sufficient to disentitle the petitioner to a parliamentary reward, we have now all the knowledge of 42 years of additional experience in the art of making and working iron, to prove beyond all quibble or question, the *originality* of my father's invention.

But to go back only to three months after the Committee had so wrongly reported as to negative the prayer of the petitioner, here is an extract from the letter of one of the oldest iron masters, 20 years in the trade previous to my father's patents in 1783 and 1784, the late Alexander Raby, Esq., iron manufacturer, then of Llanelly, in Carmarthenshire, addressed to my late brother, the petitioner, Conningsby Cort, dated 20th June, 1812.

No. 4.

This letter speaks as to what was the judgment of the iron trade, not only as regards the undisputed right of my father to both inventions for puddling and rolling, but as to the value of "Finery," or "Finers' Metal," in direct contradiction to another averment made by the Committee in paragraph No. 4 of their report, touching the merits of the nameless inventor of the latter process, said to be since found out, without which my father's inventions were declared to be good for nothing, but making *bad* iron, as no good malleable iron could be made by puddling, unless the cast iron was first converted into "Finers' Metal."

"Oh ! lame and impotent conclusion !"

Mr. Raby states that, "attempts had been made to roll *round* iron into hollows turned in rollers, but never to roll bar iron in grooved rollers, which is very different, as *round* iron is not rolled in grooves but *loose semicircles ;* no man, I think, will attempt to say that he was the inventor of rolling bar iron in grooves, nor prove that your father was not.

"Some improvements soon after took place, by first refining the pig or cast iron (Finers' metal) before they puddled it, but it was obliged to be puddled before it was made into bars, nor could the refined metal be worked to profit or with expedition by any other mode than by puddling. I will venture to say, that owing to that system, and the use of grooved rolls, this kingdom is indebted for its present proud state of the iron trade, when, instead of being obliged to bow down to the north of Europe for a scanty supply of that useful article at a very high price, we are enabled to supply all our wants with an immense annual saving to the country ; but were not only all Europe, but all the world to depend on us for bar iron, Great Britain would be able to supply the whole both good and cheap. And to whom is all this grand improvement and national benefit owing? and with whom did it originate *but with your father?* Envious persons may want to deprive him of the merit that was due to him, but when I recollect the trouble, pains, and expense he was at, to make converts, so as to increase the quantity made by his mode, when he was himself convinced of its utility, and the premium some great men then in the trade were willing to pay for the use of his patent, surely that alone is sufficient to prove that *the inventions were his own.* I can only add, I am happy to be called upon to pay this small tribute to the memory of your father, to whom I consider this kingdom, the world at large, and the *Iron Trade* in particular, are greatly indebted."

Mr. James Cockshutt, who had been in the iron trade quite as long as Mr. Raby, and was in partnership with the late Mr. Richard Crawshay in 1787, also contradicts the averment of the Committee in paragraph No. 4 of their report, for he states in his letter to the petitioner, dated Wortley Iron Works, 23rd April, 1812, "Since my last, it has occurred to me, that as much stress, I understand, has been laid upon the discovery of run out, or finers' metal, without which, it is said, that the puddling method of making iron would be of no benefit or advantage, I am of opinion that it is only *in* the puddling furnace that run out, or finers' metal, is of any advantage; for, though many trials have been made to use the run out metal in a common finery, I do not know one instance where it is continued. The only probable advantage in using run out metal in a common finery is, that by shortening the process it may prove a saving of fuel; while in the puddling process, the pernicious cinder being first separated by a previous operation, exactly as in the beginning process in a common finery, but with greater expedition, an *improved* kind of iron is obtained ; so that it appears to me, without the use of the puddling furnace, the discovery (if it may be deemed a discovery) of making run out, or finers' metal, would be of little or no advantage."

These authorities, however, although probably two of the most skilful and experienced in the iron trade of Great Britain, are not the only evidence to prove the injustice done to the case of the petitioner by the averment of the Committee in paragraph No. 4. Not the slightest reference is made in the report to the evidence of Mr. James, because, had it been noticed in any shape, the averment so damaging to my brother, the petitioner's case, must have been left out altogether.

For the trials under the superintendence of Mr. James, in 1785, in all the Royal Dockyards, of my father's patent puddled and rolled iron, were made under the most disadvantageous circumstances, out of common ship ballast, the coarsest kind of cast iron; yet even out of this material, the patent iron was severely tested by 48 different experiments against the heaviest anchors and other naval implements made of the best Swedish iron, on the strength and toughness of which this country has for ages depended for the safety of our fleets, the lives of our seamen, and the naval and military defence of the nation. Yet, my father's iron was proved equal in all the trials, and in many instances superior, to the best Swedish iron, and the Committee had in evidence before them "A Brief Statement of Facts [published by my father in 1787] relative to the New Method of Making Bar Iron with Raw Pit Coal and Grooved Rollers, discovered and brought to perfection by himself; to which is added, an Appendix containing Observations of Lord Sheffield, and Letters approving of his method, from David Hartley, Esq., Dr. Black, professor of chemistry at Edinburgh, and others."

Dr. Black in his report states that "In five out of six different trials of the heaviest anchors, weighing 34 to 59 cwt. each, made from the best Swedish iron, the patent puddled and rolled iron proved the strongest. These anchors were drawn equally against each other with a purchase that is almost incredible that either should have borne without giving way, and notwithstanding those made of the best Swedish iron did give way at last, while the patent iron did not, yet it was not till after withstanding a strain much greater than any other iron could have borne, or the severest test of actual service would ever require."

Lord Sheffield, at this time, in his "Observations on the Commerce of the American States," remarks "If Mr. Cort's very ingenious and meritorious improvements in the art of making and working iron, the steam-engine of Boulton and Watt, and Lord Dundonald's discovery of making coke at half the present price should all succeed, it is not asserting too much to say, that event would be more advantageous to Great Britain than thirteen colonies; it would give the complete command of the iron trade to this country, with all its vast advantages to navigation."

Mr. David Hartley, also one of the most scientific authorities, after examining the operation of puddling and rolling at my father's works at Fontley, in his letter, dated 19th June, 1786, observes:—"Mr. Cort may be considered to have discovered for this country an immense iron mine above ground, as all forge and common ballast iron may be purified by this process into *good* metal."

The Committee also had in evidence before them the Returns from the Navy Board, showing the contracts which the Commissioners of the Navy had entered into with my father for the following quantities of puddled and rolled bar iron:—

In 1787 for 150 tons.
" 1788 " 150 "
" 1789 " 150 "

Total ... 450

The two first of these contracts were completed; the other only in part, in consequence of my father's bankruptcy in 1789.

The Commissioners of the Navy were so satisfied with my father's iron, after using more than 300 tons for naval purposes instead of the best Swedish iron, at a saving averaging more than 30 per cent. as compared with the latter, that in their subsequent advertisements for more puddled and rolled bar iron, they expressly stated that no tender would be regarded unless the parties were able to prove that the iron had been puddled and rolled in exact conformity with my father's patent principle.

The following comparative view of the prices of British and foreign iron, furnished by a partner in one of the principal iron firms, was submitted to the Committee in 1812:—

"The contract price for the Swedish ore-ground iron of first marks has never within the last ten years been under £35 per ton, and has varied from that to £40, the last being £37 6s. 8d. per ton, from which deducting £6 13s. 4d. duty paid here per ton, leaves £30 13s. 4d. as the outgoing upon every ton so contracted for. The British puddled and rolled bar iron which has been found of a quality sufficiently good to supersede the necessity of importing the other for the use of the navy, has been contracted for at £20, and from that to £28, and calling the average price £24, the saving to the country, speaking of the Navy Board only, would be £13 6s. 8d. per ton, and to the country at large £30 13s. 4d. per ton, because the total cost of the British puddled and rolled bar iron is composed of materials abundant and otherwise useless, and of British labour.

"Every ton of iron now used in the navy is rolled with Mr. Cort's patent grooved rollers.

"The ore-ground or Swedish iron is now lower than it was when Government were the principal consumers, but if their consumption was re-established the price would be the same as it was before."

Now, as 1785 was the first time in the history of this country that naval authorities high in office, and British admirals, among the members of the Committee, ever knew that British bar iron had proved superior to the best Swedish iron for anchors, tackle hooks, the strapping and hooks of blocks, bolts, and all other iron work belonging to the building, rigging, and navigation of ships; that large quantities had been contracted for by the Navy Board for naval purposes in 1787, 1788, and 1789, and had ever since, for 23 years previous to 1812, been used for the same purpose; it presented, practically, a strong proof of the *originality* of both inventions of puddling and rolling, and the very reverse of the averment in paragraph No. 4.

For instead of not being able to make good malleable iron, the latter could not be made good by any other means than puddling, while bar iron had been actually made in all the Royal Dockyards superior to the best Swedish iron, which the inventor of finer's metal, with all his resources and works had never been able to accomplish.

The difference between my father's method of refining and "finers' metal" is, that by the latter process charcoal fuel is used; whereas the method patented by my father, termed puddling, is not effected by using charcoal, but by causing the puddling furnace to be heated by the *flame* alone of the cheaper pit coal, thus avoiding the mixing of the dross of the coal with the iron when in a liquid state; my father's principle being to expel the impurities altogether, and afterwards to consolidate the metal by squeezing it through grooved or fluted rollers (many times more expeditiously than by the hammer, by which the iron becomes cold and hardened before all the impurities are driven out of it, instead of being expelled by the roller) while the iron is in the softest state at a welding heat. It is, therefore, quite impossible to account for the extraordinary omission of such facts and proofs as to novelty of principle and application, in a Report, flatly denying both, by a Select Committee of the House of Commons, appointed to examine the merits of the petitioner's claim to a parliamentary reward.

No. 5.

The Committee in this paragraph have been prompted to assert, no doubt by the same nameless inventor of "Finers' Metal," that the bad qualities of British iron are attributable to the omission of this particular process. Now whether the badness of the quality be owing to the presence or the absence of finery, or "Finers' Metal," I leave to more competent judges to determine. But I may remark that, had my father's inventions not created a great revolution in the iron trade, from *bad* quality to *good*, instead of *eight millions* of tons of puddled and rolled iron having been exported to all the markets in the world during the last 62 years, and now progressing at the rate of more than *eleven hundred thousand tons annually*, the export might have remained at the few hundred tons, as stated by the Committee in 1782, instead of being in quantity at least 2,600 times greater!

From this paragraph it would seem that the Committee attributed the alterations in the iron trade, which in 1812 had *decreased* the imports nearly 30,000 tons, as compared with 1787, and *increased* the exports to 24,500 tons, to certain "improvements," which are designated by the Committee as having been so "extensively beneficial to the country," to "some share" in which my father is said to be justly entitled. But who was entitled to the other share, or what were the "improvements" made by others, whether their name was unit or legion? or merely "Finers' Metal," pronounced both by Mr. Raby and Mr. Cookshutt as being good for nothing without puddling? still if it was so "extensively beneficial," why did not the iron trade of Great Britain acknowledge itself greatly indebted to the inventor of it, and not to Mr. Cort for puddling and rolling?

The Committee were appointed to sit on a petition limiting their inquiry to the merits of my father's inventions, yet from the loose way in which they speak in this paragraph, it might be inferred that there was a multitude of improvements and claimants for parliamentary reward, whereas all the improvements in 1812, of any ascertainable value or efficiency, were three only in number—the puddling process, the rolling process, and the finers' metal process, and of these three two were the property and invention of my father, whilst as before pointed out (and as is notorious to all engaged in British iron manufacture), the "Finers' Metal process" apart from puddling is a nonentity.

No. 6.

With this disgraceful, and let us hope not wilful disparagement of my father's merits, to whom it may be justly said, that *nine-tenths* of the improvements belong, the Committee in this paragraph approve entirely of the very inadequate annuity of £200 per annum granted to my father, and £125 since extended to his widow, while they omit altogether to state in their report under what circumstances either of these annuities were granted.

The first annuity was granted in consequence of a letter addressed to the Right Honourable William Pitt, in 1794, then Prime Minister, by fifteen of the principal bankers and merchants in London, including ten members of Parliament, expressing the high opinion they entertained of my father's conduct and character, and commiserating the treatment he had experienced in return for the national benefits which they considered had been derived from his inventions, even at that time, now 60 years ago. The authorities were as under:—

Samuel Thornton, M.P., Robert Thornton, M.P., John Hunter, M.P., Alderman Curtis, M.P., Alderman Le Mesurier, M.P., Sir George Jackson, Bart., M.P., Brook Watson, M.P., Francis Annesley, M.P., George Smith, M.P., Robert Smith, M.P., Sir Watkin Lewis, William Chute, J. and J. Angerstein, J. Ewer, and J. M. Wilson.

The second annuity was granted on a Report made to the Lords of the Treasury in 1801, by Sir Andrew Hammond, Bart., the Comptroller of the Navy, who knew the history of my father's trials of his patent iron in all the Royal Dockyards in 1785, and the contracts which had been entered into with him by the Navy Board for the use of it, and how he had been ruined most unnecessarily to cover the debt of his partner, the Deputy-Paymaster of the Navy, who died a defaulter to the State. He, therefore, stated in his Report, that he believed the widow of the late Mr. Henry Cort and her family were real objects for national relief, which he never would have stated had there been the slightest ground then, more than half a century ago, for considering that my father's inventions of puddling and rolling were neither novel in principle or in application, while the *saving* realised by the country on the first 450 tons of puddled and rolled iron, used for naval purposes, instead of the best Swedish iron, being, as before shown, £30 13s. 4d. per ton, was equal to more than five times all the pensions received from 1794 to 1811, inclusive.

Yet, no allusion is made in the Report to the ruin of my father, or to the circumstances which led to it, though so well known to the government authorities at that time, as well as the cruel treatment he experienced in return for having rendered this country independent of foreign powers for *bar iron*, and for having provided the means of adding so enormously to the wealth and commerce of the nation. For his finances were so exhausted by the heavy expenses necessarily attending the prosecution of his valuable improvements, including his own private fortune left to him by his father, who had been extensively engaged in trade at Lancaster, (where he was born, in the year 1740,) that he was obliged to dispose of one half of his works, trade, land, and wharf, which had been demised to him, to the late Adam Jellicoe, then Deputy-Paymaster of the Navy, and subsequently to assign his patents as a collateral security for more capital advanced, besides taking his son into partnership. This arrangement, however, never would have been made, had not my father believed that he was treating with a gentleman of large fortune, who had been selected for his known integrity to fill a high position of trust under the government at that time.

Mr. Jellicoe having died suddenly, and, to the astonishment of all who knew him, insolvent, my father was deprived of all pecuniary resources, and was compelled to fail in 1789. By this distressing event, his iron works at Fontley and Gosport, with all his property, trade, stock, land, and patent rights, worth at least fifty thousand pounds, were seized under extents from the Crown, not to satisfy any debt of his own to the State, but to cover the defalcation of his partner, Mr. Adam Jellicoe, the latter having advanced to my father £27,000, out of monies held by him belonging to the State, in consideration of receiving not only 5 per cent. interest, but also, as before stated, one entire half of all the profits of my father's trade and patents, besides the taking his son into partnership, thus sacrificing for the loan of £27,000, the moiety of a trade and patent rights, that might have paid (had my father not been driven to bankruptcy) the whole of the debt due from Mr. Jellicoe, and produced the same princely fortune since realised by Messrs. Crawshay and others.

Nor was this the only injury so improvidently inflicted upon my father at this time, instead of redeeming through his inventions and trade the debt of the defaulter, Mr. Adam Jellicoe; for the patent rights were kept locked up in the office of the solicitor to the Crown, and rendered not only profitless for satisfying the debt for which they had been seized, but suffered to be of no benefit whatever to my father for discoveries, not in embryo or speculative, but actually proved in all the Royal dockyards, for making puddled and rolled bar iron superior to the best Swedish iron. Nevertheless, some of the wealthiest iron masters were allowed to work under the patents, thus locked up, *gratuitously*, for nearly ten years, till they expired, including the companies represented by the witness Mr. Samuel Homfray, and the other witness against the petition, Mr. William Crawshay, although it was well known that the late Mr. Richard Crawshay and others had signed contracts to pay to my father *ten shillings per ton* for all iron rolled under his patent for grooved rollers.

The following is an *Estimate* showing the *Loss* sustained by my father and the *State*, also the profit gained by the Iron Trade in 1798, by the locking up of the patent rights, together with the total quantities of Pig, Puddled, Rolled, and Wrought Iron made in 1798, 1811, and 1854.

	Pig Iron.	Puddled, Rolled, and Wrought Iron
	Tons.	Tons.
1788	55,000	...
1789 and 1790	120,000	30,000
1791 to 1795	400,000	210,000
1796	125,000	95,000
1797 and 1798	300,000	165,000
Total for 10 years, when the Patent expired, in 1798	1,000,000	500,000
Do. ending with 1811, 13 years	3,000,000	...
Do. for 23 years, in 1811	4,000,000	2,500,000
Do. for 42 years, in 1854	36,000,000	22,000,000
Total for 65 years	40,000,000	25,000,000

Assuming the premium payable for patent rights in 10 years, on 500,000 tons, to average only 7s. 6d. per ton, the total amount *lost* by my father and the *State*, by suffering the patents to be worked *gratuitously*, would be £187,500, which would have covered *six* times over the capital advanced by the defaulter to my father, and *nine* times the private fortune sacrificed by the latter, while the increased profit to the iron trade, say on 500,000 tons of puddled, rolled, and wrought iron, averaging only 25s. per ton, would be £625,000, and including gratuity saved, £812,000, as the additional profit may be appreciated by the fact, that 200 tons of bar iron were made in one week of the best quality, with a very few hands, by grooved rollers, instead of ten tons under the hammer, in the same time, in quality so inferior as to be wholly unfit for exportation.

It will be seen likewise, in the concluding summary in the next Number, that the total amount for national benefits derived from my father's inventions of puddling and rolling for the first 23 years, ending with 1811, only a few months before the Committee reported to the House that my brother, the petitioner, was "not fairly entitled to any Parliamentary reward," may be estimated at not less than *thirty millions sterling;* the apology, therefore, offered by the Committee in paragraph No. 6, for my brother's "*presumption*" on the ground of "partial affection so natural in his situation," was quite out of place, unless it be deemed reasonable to apologise for saving the country THIRTY MILLIONS sterling.

(*To be continued in the next Number of the Journal.*)

HAMPTON COURT PALACE.

House of Lords, Monday, 23rd July.

Lord St. Leonards said, he heard that, in consequence of the loss of a painting from Hampton Court Palace, orders had been given to screw down all the pictures. This seemed to him a dangerous mode of protecting them, for if a fire should break out in the palace, all the pictures would be destroyed, from the impossibility of moving them.

Earl Granville said that the Chief Commissioner of Works had given orders for a strict inquiry to be made into the loss of the picture. The suggestion relative to the screwing down of the pictures was worthy of consideration.

Lord Monteagle wished to remind the noble earl that the Vernon Gallery, that noble gift of a private citizen, was now in a building not fire-proof, and consequently required all cautionary measures. There ought to be some safe and suitable building for the pictures of the nation. He trusted that no restrictions would be placed upon the facility of access to the pictures at Hampton Court. That palace was a source of great pleasure to thousands of people, and until the present time he had heard from all the parties having the care of that collection but one expression of satisfaction at the mode in which the people of England, admitted freely and without distinction of rank into that building, had condncted themselves.

Earl Granville said that the Government had done all in their power to protect that most valuable collection of pictures at Marlborough House. The Government had now under their consideration a more satisfactory mode of exhibiting the pictures belonging to the nation.

Home Correspondence.

PARIS EXHIBITION—COST OF LIVING IN PARIS, &c.

Sir,—I should be glad to add my humble testimony to that of Messrs. Audley and Sopwith on the subject of the Great Exhibition at Paris. It is a truly rich, beautiful, and magnificent collection, arranged and displayed with that order and taste which characterise the French people; undoubtedly like the Great Exhibition of 1851, but exceeding it in the number of exhibitors, and differing materially from it in the proportions of objects in different departments and from different countries. In 1851, of about 17,000 exhibitors, 8000 were British, and 9000 foreign; in the Paris Exhibition, of nearly 19,000 exhibitors, only 3,600 are British, the rest, above 15,000, are of other nations—French, Austrian, German, Belgian, Swiss, Italian, &c Thus, the British visitor to the present exhibition has the opportunity of examining the products of nearly twice as many exhibitors from other countries as he had in 1851; and in this important point of view, therefore, the Paris Exhibition is more valuable *to the British*, as a great school for instruction and improvement in the arts, than our own exhibition was. We know that a teacher or writer endeavours to study every leading author on his subject—each gives something omitted by the others, places some part in a different point of view, or varies in his illustrations. So the artist, artisan, and manufacturer, cannot but be benefited by examining the works of other men and other nations, and never before was so rich an opportunity of this description within reach of the British people. It is to be hoped that they will not neglect it.

The French Exhibition consists of two distinct parts, in separate buildings; the *Palais de l'Industrie* between the Champs Elysées and the river, and the *Exposition Universelle des Beaux Arts* in the Avenue Montaigne. The Palais de l'Industrie consists essentially of three parts, the principal or stone building, fronting the Champs Elysées, devoted chiefly to the mixed decorative and useful arts; a round building joined to it, containing the tapestry and Sèvres china, and on an elevated platform in the middle, the crown jewels of France, both of the former and present dynasties; and connected with this by a passage, and running alongside the river, a remarkable structure, called the "galerie annexe," about two-thirds of a mile long, devoted to objects more strictly belonging to the useful arts, and containing specimens of valuable natural products from all parts of the world, products of the chemical arts, and every variety of machinery. In this immense room will be found a rich and varied collection of the highest efforts of the chemical and mechanical skill of France, Belgium, Austria, Germany, Switzerland, and the United States of America, the privilege of examining which can hardly be too highly estimated by the British chemist, manufacturer, or artisan. They should seize the opportunity while they may; this part of the palace of industry is the least likely to be permanent.

It seems very desirable that numbers of our working artizans should visit the Paris Exhibition, but there are many difficulties in the way. The loss of a week's wages is a very serious matter to an artisan, and when in addition to this, he must spend from two to three pounds, it does not seem likely that many of our operative class will enjoy the present opportunity, if the matter be left to their own unaided efforts. Yet it will hardly be disputed that it would be for the national benefit that as many as possible of the most skilled and intelligent British artisans should have the opportunity of examining the Paris Exhibition, and the other treasures of art in that city. The artisans themselves cannot afford to be at the whole expense; nor can we expect their employers to defray their expenses; the advantage to be derived by them is not likely to be immediate and tangible, and not certain to be derived by the employer who may send this or that artisan, who may leave him at a week's notice for another, or set up for himself. The benefits to be derived will be gradual, somewhat remote, and national, and, therefore the nation should contribute towards the expense. The only individual certain to be benefited is the artisan, and we know that he cannot bear the whole burden. The nation would never think £1,000 or £1,500 ill spent in giving a thousand of our artisans from all trades, and all parts of the country, a free passage to and from Paris on the present occasion; and it would be but a natural and graceful compliment to the French Exhibition on the part of our Government, and a proper public acknowledgement of the excellence of the Exhibition that would be very gratifying to the French Government. Without some such external aid, it does not seem likely that any considerable number of our operatives will be able to take advantage of the present opportunity of instruction and improvement. If the Government were to offer a free passage to a thousand picked men from the operative class in various parts of the country, intimating this to the mayors in the different towns, the public spirit and liberality of each district would probably do the rest, aided by the employers and the artisans themselves.

In the meantime, some few of the artisan class, and others not much richer, may be induced to visit the French Exhibition at their own charge; and I shall add a few hints to those who are resolved to make an effort for this purpose, but who have little money, and little time to spare. It is for these only that the following observations are designed.

Where the visitors are ignorant of the language, they had better engage the services of an interpreter-guide, who may be had for 10 francs per day and his café or restaurant expenses (with perhaps an abatement if engaged for a week). This, divided amongst a party of eight or ten would cost but little. M. Baillot, 8, Rue Basse du Rempart, Boulevart des Capucines, provides interpreters on the above terms; he understands and speaks English well, and on being written to would send an interpreter to meet a party by any train. The cheapest quick route is that by Newhaven (near Brighton), by which the journey from London to Paris may be made in from 15 to 18 hours, including from 6 to 8 hours sea voyage. The second-class fare *to Paris* by this route is at present one pound, and the same back; but this will likely soon be further reduced, at least for a return ticket to see the Exhibition. Instead of going to an hotel, it is an economical mode to take a furnished lodging, or sleeping apartment, which is enough for those who are to be out sight-seeing all day. The most expensive parts of the town are the vicinity of the Madeleine and the Champs Elysées, and the Faubourg St. Germain on the south side of the river, but even there a very nice, well furnished, and cleanly-kept apartment may be had for a franc and a half (about 1s. 3d.) per day, up three or four stairs; and coffee with bread and butter will be given in the morning at the rate of from 12 to 15 sous for one (the sou is very nearly a halfpenny in value). The north parts of the town, adjoining the Barriere Clichy and the Barrière Montmartre, are cheaper districts; also, the Students' Quarter, or Quartier Latin, on the south side of the Seine, between the Jardin des Plantes and the Rue de Seine, which runs from the Institute to the Luxembourg; near the Rue de l'Ecole de Medecine; also the region east of the Palais Royal.

Sights to be seen by those who have but a few days to spend in Paris.—Let the *mechanician*, whose interest is in machinery, instruments, apparatus, devote himself to the Galerie Annexe in the Exhibition, and the Conservatoire des Arts et Metiers in the Rue St. Martin, near the Boulevards. Let the *architect* or *builder* study the Louvre, Tuileries, and Hotel de Ville, and particularly their internal decorations; the triumphal arches in the Champs Elysées, the Place du Carrousel, and at the Portes St. Denis and St. Martin in the Boulevards; the Place de la Concorde, the Madeleine, the Bourse, the Palais Royal, the church of St. Eustache at the foot of the Rue Montmartre, the church of St. Germain l'Auxerrois near the Louvre, the cathedral church of Notre Dame, and the Palais de Justice, the churches of St. Sulpice and St. Geneviève (Panthéon) on the south side of the river, the Palais Bourbon (Corps Legislatif), the Palace of the Luxembourg, the tomb of Napoleon in the Hotel des Invalides, and the Ecole des Beaux Arts in the Rue des Petits Augustins (now, I think, the Rue Bonaparte, near the Institute). Let the *sculptor*, *painter*, and *designer*, devote himself to the Exposition Universelle des Beaux Arts in the Avenue Montaigne, the bronzes, china, and tapestry in the Palais de l'Industrie, the very fine collection of ancient statues in the lower floors of the Louvre, and the paintings in the upper rooms of the Louvre, and in the Luxembourg. Let the *horticulturist* view the Exposition d'Horticulture, in the Champs Elysées, opposite the Palais de l'Industrie, the Gardens of the Luxembourg and the Tuileries, the Jardin des Plantes, and the cemeteries of Père la Chaise and Montmartre. Let the *antiquarian* see the Musée des Thermes, Hotel Cluny, Rue des Mathurins, (a continuation of the Rue de l'Ecole de Medicine), the old church of St. Etienne du Mont, near the Panthéon, containing the tomb of St. Geneviève, and all that part of Paris around the Sorbonne and the College de France; the church of St. Germain des Pres, and the neighbouring prison of the Abbaye; Notre Dame and the Palais de Justice, and the church of St. Germain l'Auxerrois. And let him who delights in books, or wants to see any particular rare or costly work, step into the Bibliothèque Royale, Rue Richelieu, the B. Mazarin, at the Institute, or the B. St. Geneviève, at the side of the Panthéon, and ask for any book he wants. It will be supplied to him, with leave to sit all day and read it, or make extracts. It is quite impossible to see *all* in a few days, and each should devote himself chiefly to that which is his business or his hobby, and reserve certain of the sights for a second visit.

As to the cost of living in Paris, this need not be great. In the hotels, or certain of the cafés and restaurants, living is costly, and the francs disappear with extraordinary rapidity. Let the working man, or the humble clerk or shopman, who desires to take a week's holiday in Paris, take his coffee in the morning at his lodging; he may have it good and plenty, with milk, bread, and butter, for 6d. or 7½d. But he may manage still cheaper than ths. At a *laiterie*, he may have a large basin of coffee or chocolate, with milk, for 2½d., and bread, ½d. or 1d., as he pleases; a boiled egg for 1d., so that he may have breakfast, with two eggs, for 11 sous (5½d.) There are laiteries in all parts of the town. A very good one, where tea also may be had, is at Rue Jean-Jacques Rousseau, 4, opposite the post-office. In many parts of the town, particularly in the region east of the Palais Royal, (west of it is, mostly, an expensive district,) may be found restaurants at which dinner is given at a particular price, as 2 francs, 1 fr. 80 centimes, 1 franc, and even so low as 75 centimes. Dinner at 1 franc may be had at the restaurant called Au Rosbif, Rue de la Bourse, 3; at Courtois, Rue Coq-Heron, 7, near the post-office; and at many places in the Rue Montmartre, Rue St. Denis, and other streets in that region. There is an excellent restaurant kept by Beicher, Rue St. Marc 4, (between the Rue Vivienne and the Rue Montmartre); dinner is not given at a fixed price there, —each dish is ordered separately, but the charges are very moderate, as 3 sous for a basin of bouillon (a kind of beef-tea, very strong and nourishing); beef with vegetables, 5 sous (the beef of which the bouillon is made, I suppose, —I do not warrant this); but the *bifteck* or *cotelettes* will be found more palatable, at 7 or 8 sous; a large bottle of common beer (*bière blanche*), 6 sous; a carafon (¼ bottle) of vin ordinaire, 4 sous; café, with un petit verre (of brandy), 8 sous. There is a very large and cheap establishment in the Rue Montesquieu, 6, near the Palais Royal, with branch establishments at Rue de la Monnaie, 21; Rue Coquillière, 15; Rue Beauregard, 2; where bouillon, potage (soup), beef, roast meat, wine by the carafon or ¼ bottle, beer, coffee, salad, dessert, &c., may be had at very moderate charges, all fixed, and mentioned on a card, which is given to every one on entrance.

I need not pursue this further. All I wish to show is, that those who are so disposed may live very economically, and yet comfortably, at Paris, at a rate which may be easily judged of from the charges I have mentioned above. For two francs (1s. 8d.) a day, an artisan may live very comfortably indeed; allow 1 franc for his lodging, he thus has board and lodging for 3 francs (2s. 6d.) a day.

The lower we can reduce the costs of the journey, the greater the number who will visit the French Exhibition; and believing that such visits will be for the advantage of the British arts and manufactures, and indeed beneficial to the people of both countries, I have thought the preceding details might be acceptable to some of the readers of your *Journal.*

Admission to the Palais de l'Industrie is 4 sous on Sundays, 5 francs on Fridays, and 1 franc on each of the other days of the week.

I am, sir, yours, &c.,

H. REID.

Greenwich, July 23, 1855.

Miscellanea.

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Oil and Alcohol.—A letter from Algiers, of the 15th inst., says that M. Duplat, a chemist attached to the military hospital at Blidah, had succeeded in producing oil and alcohol by distillation from acorns growing in the oak forests which cover Mount Atlas. One hundred pounds weight of acorns produced half-a-pound of oil and five pounds of alcohol, perfectly suited for chemical purposes.—*Times* Paris correspondent.

Distribution of Parliamentary Papers.—Mr. Bolton Corney, in writing on this subject lately, says that had he been examined before the Select Committee of the House of Commons in 1852, he should have been inclined to offer the following advice:—"Give away no entire sets; you will tax the parties in the shape of house-rent. Give away no selections; you will deceive those who are in search of full information. Give rather a *compendious catalogue* of the papers, and offer the articles at a reduced price; you will then do the parties a real service, and commit no waste."

To Correspondents.

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British Iron Manufacture.—In Mr. Richard Cort's remarks on this subject, in the last number of the *Journal*, the following errata occur:—page 608, col 1, line 12, for *three* tons read *thirty;* col. 2, line 21, for *pounds* read *tons*—line 43, for 1754 read 1854—line 47, for *Herwisen* read *Herwain;* page 609, col. 1, line 13, for *Treve* read *Frere.*

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Delivered on 11*th July*, 1855.

Par. No.

298. Court of Chancery (Ireland)—Returns.
363. Kilmainham Hospital—Copy of the Royal Warrant.
372. Office of Speaker—Report from the Committee.
Midland Railway—Report upon an Accident of 22nd November, 1854.

Delivered on 12*th July*, 1855.

352. Army Commissions—Return.
367. Sweet or Made Wines—Returns.
368. Ministers' Money (Ireland)—Returns.
371. Officers' Widows Pensions—Return.
373. Education (Ireland)—Annual Report.
377. London Writ—First Report from the Committee.
378. Assay Offices (York, &c.)—Return.
227. Bills—Turnpike Acts Continuance.
236. Bills—Slave Trade (Sherbro).

Delivered on 13*th July*, 1855.

360. Poor-Law (Scotland)—Return of Parishes.
370. Yeomanry Corps—Return.
376. Public Income and Expenditure (Balance Sheet)—Account.
379. Thames Marsh Drainage—Return.
369. Auckland Islands—Returns.
233. Bills—Assizes and Sessions.
237. Bills—Downing-street Public Offices Extension (as Amended by the Select Committee).
239. Bills—Navigation Works (Ireland).
Eastern Papers (Communications with the Austrian Government)—Part 15.
Kneller Hall Training School—Report by the Rev. H. Moseley.
Prisons (Ireland)—33rd Report of the Inspectors-General.

Delivered on 14*th and* 16*th July*, 1855.

380. Criminals—Return.
382. Downing-street Public Offices Extension Bill—Report, Evidence, &c.
235. Bills—Friendly Societies (as Amended by the Lords).
242. Bills—Accidents on Railways.
208. Bills—Chinese Passenger Ships.
234. Bills—Metropolis Local Management (as Amended in Committee and on Re-commitment).
241. Bills—Nuisances Removal, &c., (as Amended by the Select Committee and on Re-commitment).
243. Bills—Trinity College (Dublin).
244. Bills—Lunatic Asylums, &c. (Amended).
246. Bills—Court of Judicature (Prince of Wales Island, &c.).
248. Bills—Crown Suits.
238. Bills—Inverness Bridge.
245. Bills—Treasurers of Counties (Ireland) (Amended).
Convict Prisons (Ireland)—1st Annual Report of the Directors.
Railways—Reports upon certain Accidents (March, April, May, and June, 1855).

Delivered on 17*th July*, 1855.

345. Workhouse Farm Accounts (Ireland)—Workhouse Manufacture Account (Ireland)—Return.
375. Chelsea Royal Military Asylum—Return.
381. Prisoners Tried at Assizes—Return.
388. Stage Carriage Duties—Copies of Applications.
389. Mileage Duty—Copy of Report.
395. Gibraltar—Copy of Despatch.

Delivered on 18*th July*, 1855.

316. Criminal Law, &c., Bills—Returns,
249. Bills—Lunatic Asylums (Ireland) (Advances) (as amended by the Select Committee, and on re-commitment.)
250. Bills—Powers under Improvement Acts Regulation.

Delivered on 19*th July*, 1855.

319. Constabulary (Ireland)—Abstract of Statement.
374. New Churches—Account.
385. Proprietors of Lands (Scotland)—Return.
387. Tea Warehouses—Return.
390. Benefices United—Return.
393. Militia—Abstract of Return.
396. Lancaster Shot Manufactory—Return.
254. Bills—Incumbered Estates (Ireland) Acts Continuance.
255. Bills—Convention with United States.
Turkish Loan—Convention.

Delivered on 20*th July*, 1855.

282. Metropolis Sewers—Copies of Reports of Surveyors.
392. Convict Prisons (Ireland)—Return.
400. Smyrna Hospital—Return.
403. Powers vested in the Companies for the Improvement of Land—Lords Report.
240. Bills—Grand Juries (Ireland) (No. 2).
256. Bills—Nuisances Removal, &c. (Ireland).
Department of Science and Art—Report.
Consolidating the Statute Law—Report from the Commissioners.

Delivered on 21*st and* 23*rd July*, 1855.

383. West Coast of Africa—Return.
406. Slave Trade (Sherbro)—Copies of Treaties.
394. Livings—Returns.
408. Education—Copies of Minutes.
410. Navy—Supplementary Estimate.
411. Transport Service—Supplementary Estimate.
257. Bills—Public Houses (Ireland).
258. Bills—Customs Laws Consolidation.
259. Bills—Customs Tariff Acts Amendment and Consolidation.
260. Bills—School Grants, Security for Application.
261. Bills—Ledbury Prebend.
262. Bills—Youthful Offenders (No. 2,) as Amended by the Lords.
263. Bills—Office of Speaker.
264. Bills—Turnpike Acts Continuance (Ireland).
265. Bills—Joint Stock Banks (Scotland).
266. Bills—Island of Tobago Loans.

Delivered on 24*th July*, 1855.

308. Poor Removal—Report from the Committee.
253. Bill—Public Health (as Amended by the Select Committee, and on Re-commitment).

Delivered on 25*th July*, 1855.

404. Court of Chancery (Ireland)—Returns.
268. Bill—Turkish Loan.
Eastern Papers (Instructions to Lord John Russell on proceeding to Vienna)—Part 16.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, July* 20*th*, 1855.]

Dated 25*th April*, 1855.

922. A. Crosskill, Beverley—Machinery for cutting and reaping.

Dated 26*th May*, 1855.

1198. J. C. Ricu and C. Bartocci, Fuligno—Beverage.

Dated 4th June, 1855.

1270. H. J. Kaye, 71, Denbigh street, Belgrave-road, and P. Burrell, Hermitage, Camberwell-grove—Communicating to two trains in motion the distance they are from each other.
1274. G. Green, Mile End-road—Sawing machinery.

Dated 3rd July, 1855.

1499. R. Muckelt, Salford—Etching machinery.

Dated 4th July, 1855.

1500. G. Guillaume, 81, Marland-place, Southampton—Communicating power.
1501. G. A. Tabourin, Lyons—Metallic arch.
1502. R. Tidmarsh, 23, Foxley-road, Camberwell New-road—Lubricating metallic and other surfaces when in motion.
1503. W. Clay, Liverpool—Manufacturing forged iron.
1504. C. Hide, Worthing—Connecting earthenware pipes.
1505. J. Inglis and A. Cowie, Glasgow—Moulding metals.

Dated 5th July, 1855.

1506. S. G. Flagg, Philadelphia—Folding boat. (A communication.)
1507. J. Connor, Coventry—Communicating between drivers and guards of railway trains.
1508. W. Gerhardi, Manchester—Safety valves.
1509. S. Oddy, Adelphi Iron Works, Salford—Bearings of mule spindles.
1510. J. and T. Horton, Birmingham—Paper, pasteboard, and pulp.
1511. J. Howard, Bedford—Ploughs.
1512. T. Felton, Birmingham—Glass reflectors.
1513. R. A. Brooman, 166, Fleet-street—Figured net and other fabrics. (A communication.)

Dated 6th July, 1855.

1514. J. V. Asbury, Enfield—Neutralizing collision of railway trains.
1515. J. Bullough, Accrington, R. Willan, Blackburn, and J. Walmsley, Accrington—Warping by power.
1516. J. A. Bellay, Paris—Earthenware and china articles.
1517. W. Balk, Ipswich—Portable steam engines.
1518. A. H. A. Durant, Tong Castle, Salop—Extracting castor oil.
1519. W. R. and W. Morris, Deptford, and R. Chrimes and G. Eskholme, Rotherham—Preventing waste of water from service pipes or cisterns.
1520. J. Beckett and W. Seed, Preston—Spinning machinery.
1521. W. Boyes, Preston—Looms.

Dated 7th July, 1855.

1522. J. Gedge, 4, Wellington-street South, Strand—Aerated waters. (A communication.)
1524. E. V. Neale, 4, Russell-place, Fitzroy-square—Vitreous substances for labels, tablets, finger-plates, tiles, &c.
1525. J. Pym, Stanley-street, Pimlico—Materials for building purposes.
1526. F. Yates, Birmingham—Dinner and dessert fork.
1527. C. F. Werner and L. Piglhein, Hamburg—Elastic stuffing for chairs.
1528. A. White, Glasgow—Grinding grain.
1529. E. W. Burrows, Clerkenwell—Increasing efficiency of steam-engine and other power.

Dated 10th July, 1855.

1538. G. Riley, 12, Portland-place North, Clapham-road—Mills.
1542. H. E. Flynn, Retreat, Ranelagh, Dublin—Preventing evil effects of recoil of cannon.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

1567. Charles Byrne, Dublin—Preparation of fish combined with pepper, wine, and other condiments, for sandwiches.—13th July, 1855.
1599. William Pidding, Putney—Coverings for the feet.—17th July, 1855.
1600. William Pidding, Putney—Manufacture of building materials.—17th July, 1855.

WEEKLY LIST OF PATENTS SEALED.

Sealed July 20th, 1855.

173. Frederic Prince, 3, South-parade, Chelsea—Improvements in cartridges for fire-arms.
180. Sir James Caleb Anderson, Bart., Fermoy, Ireland—Improvements in steering ships.
184. William Edward Newton, 66, Chancery-lane—Improved machinery for raising and forcing fluids.
212. Henry Nightingale and Robert Nightingale, Chorley—Improvements in machinery or apparatus for slubbing, roving, and spinning cotton and other fibrous materials.
281. Peter Smith, Glasgow—Improvements in machinery or apparatus for printing textile fabrics and other surfaces.
322. John Ramsbottom, Longsight, near Manchester—Improvements in the construction of certain metallic pistons.
378. Benjamin Goodfellow, Hyde, Chester—Improvements in machinery for pumping, which improvements are applicable to the air pumps of steam engines and to other purposes.
452. Stanislas Vigoureux, Rheims—Improvements in printing, ornamenting, and dressing woven and textile fabrics.
651. David Elder, junior, Glasgow—Improvements in moulding or shaping metals.
1060. Edward Humphries and Thomas Humphries, Pershore—Improvements in machine riddles for separating straw from grain, and for other similar purposes.
1088. Thomas Charles Eastwood and Thomas Whitley, Bradford—Improvements in preparing and combing wool and other fibrous substances.
1177. Theodor Baron Von Gilgenheimb, Widenau, Silesia—New machine for tilling land.
1236. Alfred Vincent Newton, 66, Chancery-lane—Improved calculating apparatus.

Sealed July 24th, 1855.

181. Charles William Tupper, 3, Mansion House-place—Improvements in the construction and arrangement of coverings for buildings.
183. Augustus Edward Schmersahl and John Augustus Bouck, Miles Platting—Improvements in the manufacture of sulphuric acid, and in apparatus for effecting the same.
204. George Searby, 154, Sloane-street, Chelsea—Improvements in the manufacture of boots and shoes, also applicable to other articles made of or partly formed of leather.
207. John Hutchinson, Longroyd-bridge, Huddersfield—Improvements in apparatus to economize steam.
234. Arthur Lyon, Windmill-street, Finsbury—Improvement in sausage making or mincing machines.
240. John Francis Porter, Bessborough-street—Improvements in the manufacture of bricks and other articles of clay or brick earth.
251. Jules Castel, and Frederic Mauricheau Beaupré, Marseilles—A new system of burner for lamps called the Pyro pneumatic Burner.
252. Isidore Carlhian and Isidore Corbière, 27, Castle-street, Holborn—Improvements in moderator lamps.
261. Thomas Allan, Adelphi-terrace—Improvements in obtaining and transmitting motive power.
267. Peter Armand le Comte de Fontaine Moreau, 4, South-street, Finsbury—Improved mode of preserving railway and other tickets.
286. William Warbrick, Dukinfield, and John Walker, Compstall-bridge, near Stockport—Improvements in machines for preparing, spinning, doubling, warping, and dressing cotton, wool, and other fibrous substances.
311. John Langman, Plymouth—Improvements in portable buildings specially adapted to campaigning purposes.
314. George Henry Ingall, Throgmorton street—Improvements in telegraphic communication and apparatus connected therewith.
453. Thomas Sadleir, Mulla, Tullamore—Improved apparatus and method of manufacturing charcoal, which can also be applied to cooking and other purposes.
535. George Tomlinson Bousfield, Sussex-place, Loughborough-road, Brixton—Improvements in preparing wool and other fibrous substances for spinning. (A communication.)
587. William Monday, jun., Kingston-upon-Hull—Improvements in preparing, mixing, and grinding the various kinds of plumbago, graphite, or blacklead, either together or separate, and with or without other materials, for polishing, lubricating, and for other purposes, and in otherwise preparing the same for sale.
647. James Willis, 75, Cheapside—Improvements in certain parts of the frames and furniture of umbrellas and parasols.
664. John Henry Johnson, 47, Lincoln's-inn-fields—Improvements in machinery or apparatus for dressing flax, hemp, and other fibrous materials. (A communication.)
1033. Alfred Vincent Newton, 66, Chancery-lane—Improved construction of air engine.
1068. Adam Guild, Manchester—Improvements in the process of bowking.
1099. George Tomlinson Bousfield, 8, Sussex-place, Loughborough-road, Brixton—Improvements in the manufacture of wrought nails.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Proprietors' Name.	Address.
3735	July 16.	Allen's Wood Trestle Folding Camp Bedstead	J. W. and T. Allen	18 and 22, Strand.
3736	„ „	Envelope Paper	Frederick Wm. Ralph	36, Throgmorton-street.
3737	„ 17.	Grand Universal Safety Pocket Detector for Watches	Albert Hatchett Jones	19, Helmet-row, Old-street.
3738	„ 24.	Improved Washing Machine or Churn	William N. Nicholson	Newark-upon-Trent
3739	„ „	A "Buddings" Mowing Machine	Thomas Green	Leeds.